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A CRUCIAL EXAMINATION OF RISK ASSESSMENT AND MANAGEMENT FRAMEWORKS FOR ADAPTABLE SMEs

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Abstract:
Throughout history, small and medium-sized businesses (SMEs) have been the foundation of the world economy. By supporting exports, creating jobs, and innovating, SMEs are boosting the economy. Compared to large enterprises, SMEs face many obstacles to their existence. It has been noted that nations with a large number of SMEs see faster economic growth than those with a small number. SMEs' lack of resilience is caused by the dangers and challenges to their ability to survive. Risk factors can make SMEs vulnerable and cause death if they are disregarded. This study undertakes a thorough evaluation of the literature on risk assessment and risk management of SMEs spanning two decades, from 2000-01 to 2023-24, in light of the significance and breadth of the subject. The literature now in publication focuses on recognizing and classifying the many risk factors that SMEs encounter. This study uses a systematic literature review and PRISMA technique, identifies gaps to find new research horizons, and lists risk variables and the frameworks stated in the literature. A careful examination showed that the majority of the literature on the subject focused on identifying and cataloging the different risk factors that small and medium-sized enterprises (SMEs) face. This resulted in a significant gap in risk assessment and management frameworks, as well as in the application of new methods and tools that would increase SMEs' resilience.

Keywords: PRISMA, SME resilience, enterprise risk management, risk assessment, risk management frameworks, and SMEs

1. Introduction

Small and medium-sized businesses (SMEs) are essential to the expansion of economies everywhere, especially in developing nations. Globally, SMEs make up 50% of all jobs and 40% of GDP. SMEs are acknowledged globally as a necessary component of a competent and forward-thinking economy (Gonçalves et al., 2016). SMEs provide value across all industries, making them a pillar of the economy (Vasnier et al. 2021). Compared to large firms, SMEs are more capable of innovation (Alcalde et al., 2019). However, compared to larger businesses, SMEs are subject to a number of dangers and threats, such as slow growth, low investment, and weak trade, all of which have the potential to cause a company to fail. Risks and businesses are intrinsically linked, and SMEs are no exception. A strong framework is necessary for business entities to reduce the negative consequences of risk, but it is especially important for SMEs, since their small size and other limitations may prevent them from having the resources to maintain and expand (Wang 2016). Reducing the risks that small and medium-sized firms (SMEs) are now exposed to is a primary concern for new businesses (Agyapong, 2020). Brustbauer (2014) recommended using risk management strategies to identify and mitigate risks before they irreversibly harm SMEs. Because most SMEs would prefer to completely avoid risks or, to a lesser extent, transfer risks through insurance, organized risk management is essential (Smit, 2012). According to Pereira et al. (2015), risk management frameworks are available for large organizations, but SMEs cannot utilize them due to their high cost and complexity. Financial, operational, administrative, strategic, and supply chain factors can undoubtedly create a risky and unstable environment for SMEs. Nevertheless, these risks can be effectively managed by SMEs with the help of a management framework and appropriate risk assessment. Over the past 20 years, a large number of researches have been carried out in a variety of risk management domains; nevertheless, the majorities have concentrated on risk definition. Risk management in SMEs has not received much attention (Verbano & Venturini, 2013. Despite the establishment of risk management procedures (RMPs), there is disagreement about what exactly qualifies as RM for SMEs (Renault et al., 2018). Studies on how SMEs analyze and manage risks without establishing or implementing particular procedures are scarce (Babu et al., 2020; Sunjka & Emwanu, 2015). Risk management (RM) has been viewed as a disadvantage in SMEs and has not gotten much attention in the academic literature. Understanding the scope of academic research in this area throughout the previous 20 years of industrial change is important given the importance and delicate nature of the topic. It is clear from the PRISMA methodology's comprehensive synthesis of earlier research that integrative frameworks and their usefulness have received little attention. The current study attempted to fill these gaps by addressing the following research topics with the goal of advancing managerial relevance and theoretical understanding in the field of SME risk resilience. 1. What conceptual, methodological, and contextual gaps are there in frameworks for SME risk assessment and risk management, and how do these gaps impede the growth of SME resilience? 2. What managerial implications do new risk assessment and management methods offer for enhancing SME resilience, and how do they appear in the current SME literature? This study intends to provide a comprehensive evaluation of the literature on risk management in SMEs and to give a complete examination of the researcher's approach to risk identification, assessment, and management in order to support the research questions. In January 2024, the study's articles were taken from reliable databases. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) application has the sample of 159. In the context of SME risk management, the PRISMA model improved the reliability and reproducibility of the review findings by ensuring transparency and methodological rigor in the literature selection process. This allowed for a systematic identification, screening, and inclusion of pertinent research. By methodically distinguishing between risk identification, assessment, and management, this study offers the most thorough PRISMA-based synthesis of SME risk assessment and management literature spanning more than 20 years. It also highlights structural imbalances in previous studies.

2. Review of Literature

The concept of risk is discussed in a variety of ways in the literature. Risk is described as "an event or circumstance that has a negative effect on your business" (Small organization Development Corporation, 2022). According to Small Business Development Corporation (2022), "risk management is the SCMS Journal of Indian Management, January–March 2026 7 processes through which firms identifies, assess, and treat risks that may have an impact on their business operations."

2.1 The Study's Novelty and the Need for SLR in the SMEs Domain

According to Flavio and Joao (2020), there is a large and dispersed body of literature on SMEs that covers a variety of topics and techniques. Because of this fragmentation, a thorough literature evaluation is required in order to classify and organize the current body of knowledge. Similar to this, the research on SME is varied, with studies examining several factors and producing conflicting results (Falkner and Hiebl, 2015). This paper's literature review can be used to summarize these results and spot recurring trends. The goal of this review paper was to pinpoint a gap in the literature and offer a path forward for further investigation. For example, additional empirical study on risk identification and strategy implementation is needed, according to the review on risk management in SMEs. In the SME sector, a number of SLRs have been carried out, each with a distinct focus. For example, Flavio and Joao (2020) have examined the internationalization process and the factors that influence it. Numerous risk kinds and the significance of risk management procedures were identified in the current SLR on risk management (Falkner and Hiebl, 2015). This SLR recommended a more thorough examination of particular risk management techniques and their efficacy. The factors influencing banks' credit and profitability have been studied in reviews of SME financing (Rao et al., 2023). The effects of various funding approaches on the expansion of SMEs, however, merit more investigation. Reviews of digital innovation in SMEs exist, but they frequently point out knowledge gaps on the innovation process and its results (Ramdani et al., 2021). By concentrating on understudied facets of SMEs that have been identified as gaps in the literature, such as risk assessment systems and associated risk management strategies, the current research seeks to set itself apart. Because the synthesized findings have an impact on a firm's performance, this study also provides policymakers and SME managers with practical advice. Strong risk management can lower the probability of credit default, according to Yang et al. (2021) and Ubarhande and Chandani (2021). A model centered on financial risks was created by Bilal et al. (2016) to assess obstacles to the expansion of SMEs. On the other hand, Gonçalves et al. (2015) developed a framework that uses an idiosyncratic decision support system to evaluate the credit risk of SMEs. A framework for determining credit ratings by evaluating SME credit risk was introduced by Roy

(2021) and Yin et al. (2020). In order to reduce the expense of leaving the market, Quintiliani (2017) created a conceptual framework to recognize financial hardship among SMEs. The supply chain and supply chain financing are new risk factors that have caught the interest of scholars in addition to financial risk. According to Temel and Durst's (2020) study, supply chain risk management influences innovation performance, whereas technological turbulence is the most important factor affecting the supply chain. A method for evaluating supply chain sustainability risk was proposed by Sutrisno and Kumar (2022) Zhou et al. (2019) used machine learning to assess credit risk in the supply chain finance of SMEs. Using financial and behavioral data, Zang et al. (2022) created a framework to evaluate the Supply Chain Finance Credit Risk. Using the SVM technique, Games and Rendi (2019) established an index to evaluate credit risk in SCF. Alora and Barua (2022) used Fuzzy TOPSIS to create a supply chain risk index. In order to create an inclusive supply chain risk index, Tong and Yang (2021) made an effort to identify, classify, and rank the supply chain hazards that the manufacturing sector faces. Tong and Yang (2021) and Yang et al. (2021) evaluated supply chain financing credit risk in this study. A approach to assess the impact of risk on business strategy was suggested by Vasnier et al. (2021Hudakova et al. (2018) evaluated the factors that influence business risk and how they affect firm size. The impact of enterprise risk management on the performance and management of SMEs was examined by Glowka et al. (2020). The researcher's attention was drawn to the Risk Assessment and Identification, but its scope is restricted to a few risk categories.

2.2 Risk Control

For SMEs, risk management regarding a company's existence and insolvency is essential. A company's future is positively impacted by business risk management (Liu & Park 2021). The application and accessibility of risk management techniques for SMEs were the main topics of the risk management study. Sifumba et al. (2017) investigated how manufacturing SMEs applied risk management practices and discovered that SMEs had little knowledge of risk management. covers the essential components of risk management procedures. Zoghi (2017) examined SMEs' risk management strategy and its significance, although he only looked at risk identification. According to the Crovini et al. (2020) study, SMEs must adhere to certain protocols or an appropriate risk management strategy. The challenges SMEs encounter while putting risk management strategies into practice were examined by Rostami, Sommerville, Wong, and Lee (2015). The "entrepreneurs' and firms' age" is the critical aspect for risk management, according to Virglerová et al. (2016), who looked into how specific factors affect financial risk management. Kachlami and Yazdanfar (2016) discovered a favorable correlation between entrepreneurial behavior and financial risk management. According to Falkner and Hiebl (2015), owners' and managers' attitudes have an impact on risk management since they are in charge of it. However, the study by Belas et al. (2015), which focused on entrepreneurs' approach to financial risk management among SMEs, discovered a negligible correlation between entrepreneurs' education and the risk management method. Sunjka (2015) and Ali et al. (2021) investigated the risk management strategies used by SMEs to deal with important issues. The study conducted by Qubtan et al. (2021) aimed to investigate how risk management is used in SMEs. They discovered that while SMEs are aware of risk management, they do not put it into practice. According to Hudakova et al. (2018), risk management procedures are essential since risk has a detrimental impact on company performance. The availability of procedures for managing occupational risk in SMEs was examined by Cantonnet et al. (2018), who suggested that simple methods of implementing risk management be developed. A model was created by Kaassis and Badri (2018) to assess the maturity of occupational risk management in SMEs. Yang, Ishtiaq, and Anwar (2018) investigated how enterprise risk management strategies use competitive advantage. Initiatives like creating a risk management team and creating risk acceptance and aversion statements are linked to the implementation or consideration of ERM methodologies (Ali et al. 2021). Renault et al. (2018) examined project risk management strategies used by construction companies and came to the conclusion that SMEs should increase awareness of these strategies. In their analysis of the effects of variables meant to reduce operational supply chain risk, Chowdhury et al. (2019) discovered that supplier integration was linked to operational supply risk due to its favorable correlation with social capital. Renault et al. (2021) assessed how demographic factors affected project risk management procedures. Demertzis and Vatalis (2021), on the other hand, contended that project risk management underutilizes risk management procedures. Catanzaro and Teyssier (2020) established a risk management framework for the internationalization of SMEs and discovered a relationship between the internationalization risk of SMEs and export promotion programs. The literature details how some researchers developed a framework for risk management for SMEs while conducting their research. Marcelino et al. (2014) created and verified a project risk management model. The Utami et al. (2021) study helped SMEs develop risk-reduction plans for natural disasters. A conceptual and qualitative framework for ERM was created by Bensaada and Taghezout (2019).

2.3 The Significance of Risk Management for SMEs

SMEs are exposed to and more susceptible to changes in their environment (Huynh and Lin, 2025). Consequently, it is clear that operating a business might be dangerous. In developed nations, local marketplaces are becoming more competitive, endangering the existence of many SMEs (St-Pierre et al. 2018). The COVID-19 pandemic has affected industry development since it began in 2020 (Tong & Yang 2021). Globalization trends created a number of barriers to SMEs' expansion (Vijayalakshmi et al. 2022). Due to their lack of administrative resources and procedures, SMEs are more vulnerable to hazards that may arise at different project stages than large firms (Demertzis and Vatalis 2021). It is challenging for small businesses to recognize risks and create the necessary counterstrategies (Temel & Durst 2020). Risk management is a major worry for SMEs because of their lack of expertise and knowledge (Qubtan et al. 2021). The long-term success of businesses depends on the leadership and strong managerial skills of SMEs' decision makers, according to Susi and Lukason's (2019) study. According to Liu and Park (2021), SMEs should assess their company size, industry, affiliation, and ownership structure prior to putting any enterprise risk management model into practice because these elements affect the model's efficacy. The appropriate application of risk management techniques can enhance SME sustainability and commercial success (Brustbauer 2014).

3. Techniques

The main objective of the study is to present a thorough analysis of the literature on the evolution of risk identification, assessment, and management in SMEs, as mentioned in the part before this one. The methodology and future scope of research on risk management for SMEs are other goals of this literature review paper. By taking into account the literature published over the last 20 years, beginning in 2002, the stated objectives are accomplished. A PRISMA-guided qualitative synthesis is the best approach given the conceptual variety of SMEs research. Bibliometrics and meta-analysis are frequently used by authors in review publications. Nonetheless, the particular research goals mentioned in the relevant section, the methodological strategy selected, and the study's scope are probably what will motivate the current review paper on SMEs. In order to obtain a thorough grasp of the risk assessment and management frameworks described in the body of existing literature—which is thought to be adequate for the aforementioned purposes—the writers used SLR. A systematic review was carried out for the current study by gathering pertinent research on risk assessment and management in small and medium-sized businesses, evaluating the methodologies, and creating the PRISMA flow diagram. After the PRISMAwork, the 363 articles that were found in the database were further reduced to 159. 3.1 Study duration and methodology Between 2022 and 2024, the systematic review was carried out. The systematic review was carried out using a 27-item PRISMA checklist, and the study protocol was entered into the Research Registry. The PRISMA framework that follows provides a thorough overview of sample extraction and finalization.

3.2 Proxies for Variables

Studies that specifically target risk identification, evaluation, or mitigation strategies within the SME domain cover the main facet of risk management in SMEs. In the current study, risk assessment—which reflects the methodical discovery and evaluation of prospective risks—is addressed as a crucial variable alongside risk management. Its crucial function in organized risk management procedures justifies its inclusion. The existence of risk detection techniques and assessment frameworks recorded in the relevant studies serves as a stand-in for this variable. Theoretical relevance, consistency among empirical investigations, and compatibility with the goals and research questions of the study serve as guidelines for the selection of variables and proxies.

3.3 Criteria for search, inclusion, and exclusion

The study took into account English-language research from 2000–2001 and 2023–2024. Using the methods described by Atkinson and Cipriani (2018), the first scoping research was carried out by searching publications from reliable publishers' websites and databases. Based on the inclusion and exclusion criteria, search strategies were used to evaluate the study's relevancy, information completeness, and research quality.

Table1.The search strategy and keywords used to find the articles Table1.

Sr. No.	Keywords and Search Criteria
1	Boolean operators such as AND, OR, and NOT were used to refine the search strategy.
2	Risk Assessment and Management in Small and Medium Enterprises. Search terms included: "Risk Assessment", "Risk Management", "MSME", "Small and Medium Enterprises".
3	Risk Analysis and Evaluation in Small and Medium Enterprises. Search terms included: "Risk Analysis", "Risk Evaluation", "MSME", "Small and Medium Enterprises".
4	Risk Mitigation for Small and Medium Enterprises. Search terms included: "Risk Mitigation", "MSME".
5	Strategies for Managing or Reducing Risk in Small and Medium Enterprises. Search terms included: "Risk Strategies", "MSME".
6	Credit Risk in Small and Medium Enterprises. Search terms included: "Credit Risk", "Managing Credit Risk", "MSME".

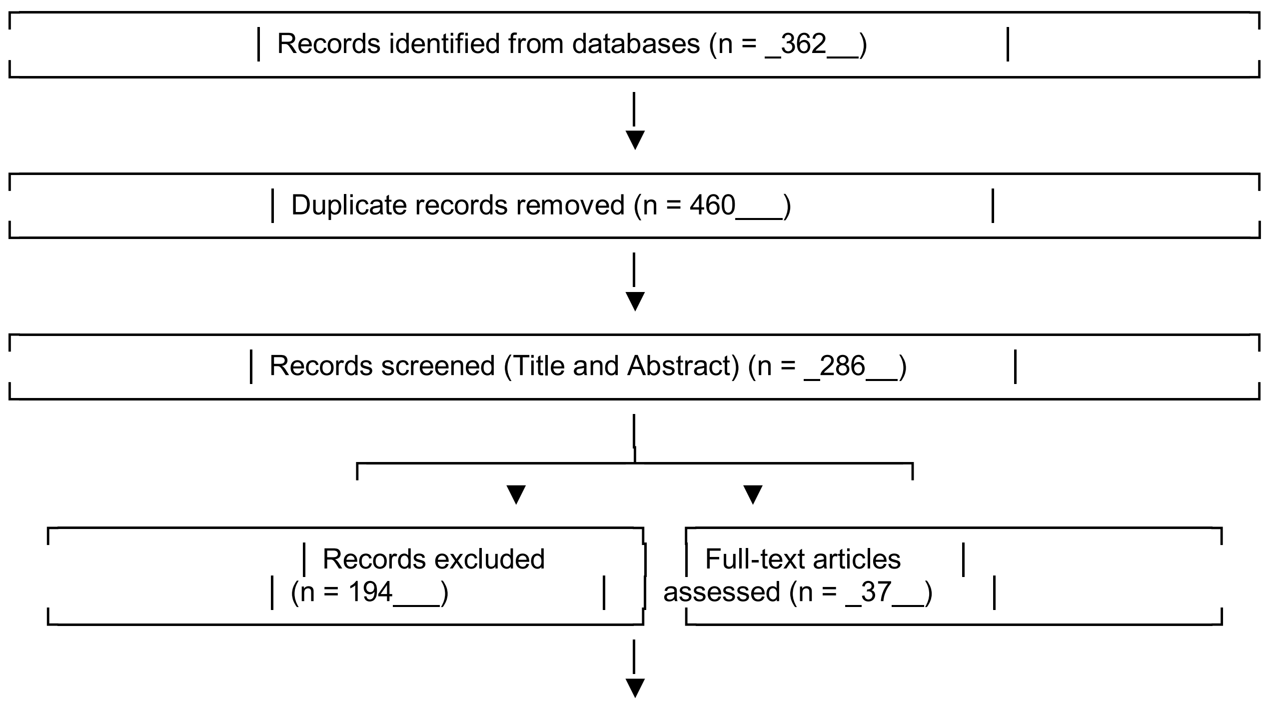
The search strategy and keywords used to find the articles included in the study are listed in Table 1. The implementation of a single statistical estimating model would not produce significant or comparable results due to the variety of MSME studies in terms of data sources, risk dimensions, and analytical approaches. For obtaining a thorough grasp of risk assessment and management frameworks in the body of current literature, a systematic qualitative synthesis using the PRISMA framework is therefore considered adequate and suitable. The study comprised published articles that conducted empirical research on all kinds of MSMEs and their risk assessment, risk management, risk analysis, and risk reduction. A few studies and papers were taken into consideration but included separately. Only peer-reviewed research articles were taken into consideration for the investigation. Research publications that could not be evaluated in their whole and those used ambiguous and inefficient methods were not included in the literature. Figures without numerical values were excluded from the analysis. Articles that did not emphasize the risks associated with MSMEs were not included.

3.4 Information gathering

The PRISMA flow diagram (Figure 1) outlines the criteria for inclusion and exclusion of publications from the study.

Figure 1. PRISMA 2020 Flow Diagram

Identification of studies via databases



| Full-text articles excluded |
| with reasons (n = 173___) |

↓

| Studies included in the |
| Systematic review (n = _91__) |

Only relevant publications that satisfied the study's requirements were found. When an abstract was considered appropriate, the entire paper was retrieved. To find more pertinent and suitable content, each article was manually searched. The selected articles' references were reviewed, and if appropriate, the full articles were referenced. The information was extracted and entered into Word documents and Microsoft Excel sheets. To accomplish the goals of the study, a content analysis of the sample is carried out. A further section presents the analysis of the chosen sample. A descriptive, bibliographic study and content analysis were used to get the outcomes for future directions.

4 Findings and Conversations

Figure 2 shows research papers that have been added to the field of risk management by year and the growth of publications that have been published globally since 2002 with an emphasis on risk management in SMEs.

Figure 2. Annual Publications on Risk Management in SMEs

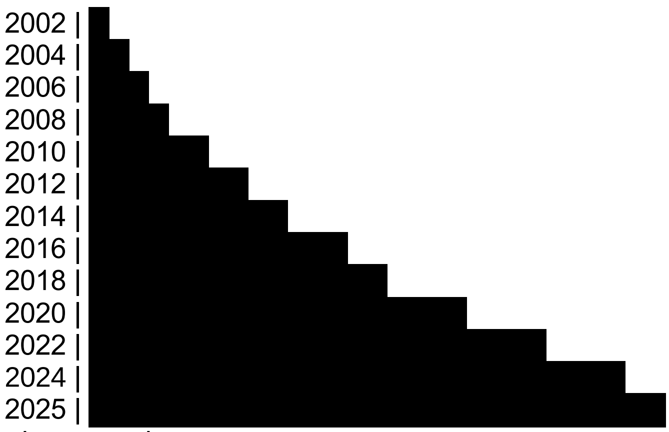


Figure caption:

Figure 2. Annual growth of global research publications on risk management with a focus on small and medium-sized enterprises (SMEs) from 2002 onwards. The figure illustrates the increasing volume of scholarly publications, indicating growing academic interest in SME risk management over time. Although it was steady, Figure 2 shows that there was less research and study in the field in the early years. In more recent years, research contributions on the topic have attained a recognized level. The quantity of research contributions has significantly increased since 2017, and the year 2023 had the most research publications in that field. It highlights the topic's relevance and demonstrates how study on risk and risk management in SMEs is becoming more popular among scholars.

Figure3.The global geographic distribution of studies in the aforementioned field, categorized by major continents

Number of Studies

The global geographic distribution of studies in the aforementioned field, categorized by major continents. The global geographic distribution of studies in the aforementioned field, categorized by major continents, is shown in Figure 3. Nearly half of all study in the field was done in European nations. Numerous researches have been conducted in nations like Germany, France, Italy, Slovakia, the UK, and Spain. Asian nations, especially China and India, have studied the subject in great detail in recent years. These nations have focused their study on risk management in SMEs in recent years. The USA, Australia, and Africa have not done much research in this area. The field has garnered attention globally, despite differences in the quantity of research carried out among nations. Regardless of whether the economy is developed, emerging, or developing, research on risk management in SMEs is becoming increasingly important. The methodology employed to carry out the research is an essential foundation for any study.

Figure4. The primary research methodology used by researchers

Percentage of Studies (%)	
Survey (Primary Data)	49%
Secondary Database Data	22%
Interview & Observation	12%
Other/Not Specified	17%

The primary research methodology used by researchers is depicted in Figure 4. The study article's methodological approach to data production and collecting is depicted in Figure 4. The methodology used by the researcher is descriptive and empirical. According to the analysis, a large number of researchers have employed primary data, including survey data (49%) and interview-observation data (12%). Only 22% of studies have made use of secondary data from the database. A portion of the sample's research is literature-based, highlighting the area's gap and potential for more research. In this study, elements are prioritized according to their impact and probability of occurring. It facilitates precise and accurate risk identification and evaluation.

Figure5. The various methods and instruments used in the research for analysis

Data Analysis Tools

Statistical Tools
- Z-test
- Chi-square Test
- Correlation Analysis
- Regression Analysis
- Bartlett's Test
- Basic Mathematical Tools

Modelling & Simulation
- Markov Model
- Simulation Models
- KMV Model

Decision & Evaluation Tools
- Decision Support System (DSS)
- BWM (Best-Worst Method)
- TOPSIS

Risk Assessment Tools
- Altman Z-score Model
- Credit Risk Models
- Financial Risk Assessment Models

Qualitative Analysis Tools

└─ Content Analysis

The various methods and instruments used in the research for analysis are shown in Figure 5. Researchers employ a variety of instruments, from simple to sophisticate. These scholars prefer to use regression and conceptual analysis. Some academics have developed models and performed factor analysis using structural equation modeling. Basic statistical and mathematical tools have not been used by many scholars. Few researchers have used cutting-edge methods like decision support systems and machine learning. The study's sample is analyzed and divided into three categories: risk management, risk assessment, and risk factor identification.

Figure6.Goal of many investigations

Risk Management Framework

Risk Factor Identification

Financial Risks
├─ Credit Risk
├─ Liquidity Risk
└─ Bankruptcy Risk

Operational Risks
├─ Process Risk
├─ Human Resource Risk
└─ Technology Risk

External Risks
├─ Market Risk
├─ Economic Risk
└─ Regulatory Risk

Risk Assessment

Risk Identification
├─ Probability Assessment
├─ Impact Assessment
└─ Risk Categorization

Risk Analysis
├─ Quantitative Methods
├─ Statistical Models
└─ Simulation Models

Risk Evaluation
├─ Risk Ranking
├─ Risk Prioritization
└─ Decision Making

Risk Treatment & Management Strategies

Risk Mitigation
├─ Avoidance
├─ Reduction
└─ Transfer

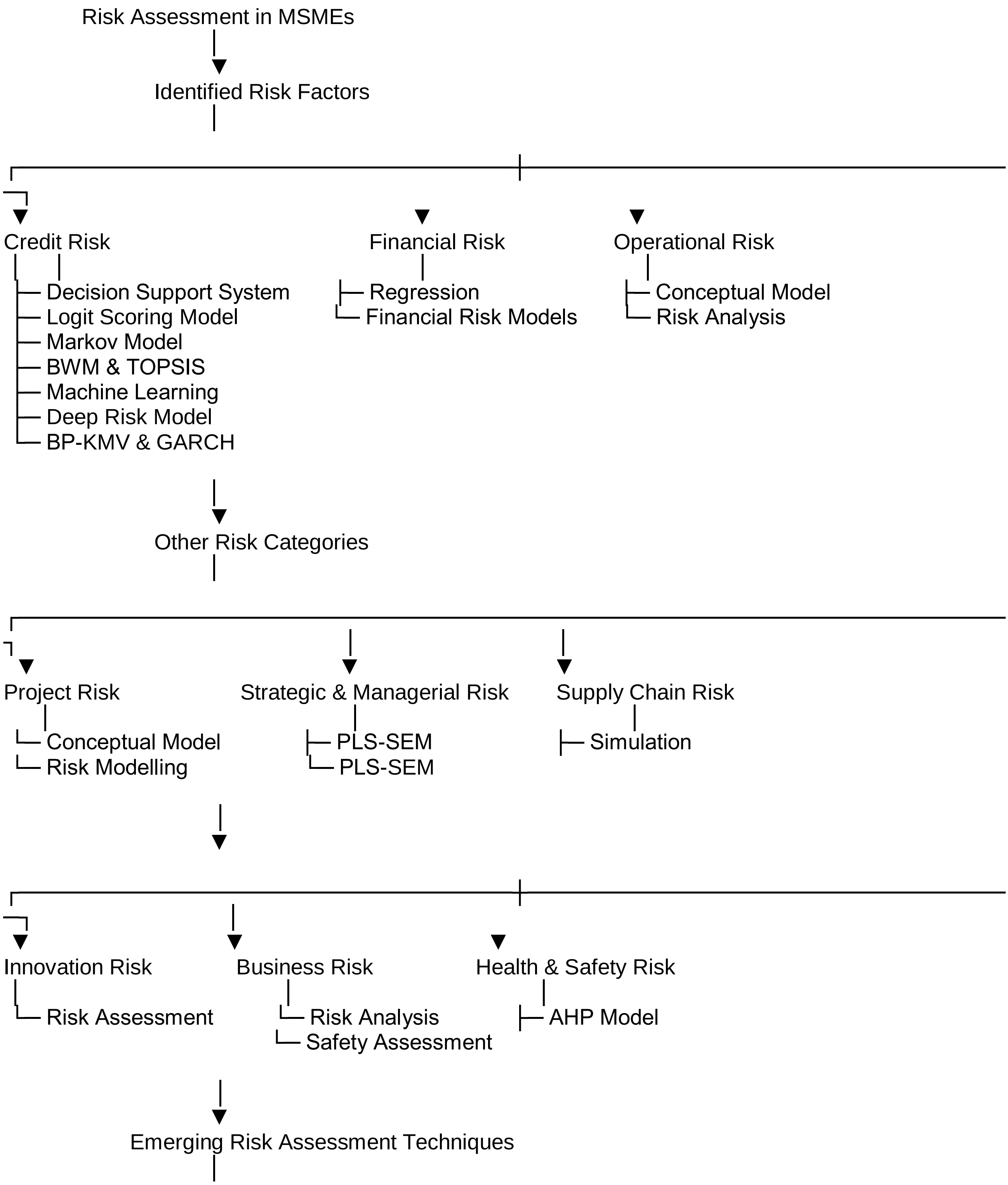
Risk Monitoring
├─ Continuous Review
├─ Reporting
└─ Feedback

Risk Control
├─ Policies
├─ Controls
└─ Improvement

As seen in Figure 6, the main goal of many investigations has been to identify factors. Over 50% of academics have found elements that could put SMEs at risk or provide difficulties. A quarter of the

academics looked at risk assessment and evaluation. Only 17% of scholars have focused on risk management in SMEs. The aforementioned talks and analyses demonstrate the necessity for researchers to give risk management more attention in their investigations. Risk identification is important, but after risk has been identified, it must be managed because SMEs may fail if risk management procedures and frameworks are not followed (Renault et al. 2018). According to Verbano and Venturini (2013), early diagnosis and treatment are less important than identification. Risk treatment is not given enough attention.
The major writers who have discussed risk assessment, analysis, or evaluation in their research works are highlighted in Figure7. 41 articles out of all the samples examined talked about or carried out risk assessments for SMEs.

Figure7.Analysis or evaluation in their research works



Machine Learning
Decision Support Systems (DSS)
Simulation Models
Artificial Intelligence-Based Models
Multi-Criteria Decision Making (MCDM)
Statistical Models

5.1 Conclusion

By offering a thorough analysis of the literature on risk management and assessment for SMEs, taking into account all risk types, the current study has added to the corpus of literature. Many characteristics were categorized by the study and combined into a single risk factor. Prior research has concentrated on comprehending risk in isolation rather than in groups. The analysis reveals that resource-based perspective frameworks and conventional enterprise risk management remain predominant, but dynamic and behavioral factors will become increasingly significant. By offering the risk assessment and management framework created for SMEs, the study adds to the body of existing literature and highlights the necessity of creating sophisticated frameworks for SMEs.

5.2 Useful Consequences

This study's important recommendation is for SMEs to institutionalize risk management practices and become more aware. Many SMEs operate in semi-formal or informal sectors in countries like Vietnam, Indonesia, the Philippines, and India, and they often lack systematic techniques for identifying and mitigating risks (Moinak, 2018). According to research, this discrepancy makes people more vulnerable to changes in markets, operations, and finances. SMEs may suffer significantly from supply chain interruptions caused by natural catastrophes or geopolitical turmoil, which are common in Asia, if they do not develop deliberate strategies to mitigate risks (Guo et al., 2022). In many developing nations, risk avoidance and a hierarchical decision-making structure are favored, which may hinder innovation and aggressive risk-taking.

6. Restrictions

As with any systematic literature review, the study has certain limitations. The study has excluded the non-indexed studies and concentrated on a small number of well-known databases.

Semantic studies are covered in the research article examined in the English language between 2000 and 2001. Rather than using a statistical meta-analysis, the study mainly uses a qualitative approach. Future studies might deal with these restrictions.

By removing studies that didn't fit the predetermined inclusion criteria, the PRISMA methodology used in this analysis made it easier to systematically identify and extract pertinent studies. Important avenues for further investigation were determined after a comprehensive analysis of the body of current literature. A comprehensive summary of academic contributions in the fields of risk management and risk assessment within the SME sector was given by the critical review. The results show that while research in this field is rapidly gaining attention from academics around the world, a sizable percentage of papers come from European countries. Significantly, contributions from Asian nations have increased recently, indicating a growing regional interest in the topic. The field seems to be dominated by conceptual research, which is frequently preferred above applied research. Few studies have made progress toward the creation or empirical validation of models for risk identification and management, despite the fact that literature provides insightful information on the major risk variables that organization should prioritize. Current models often use modern approaches and concentrate on either risk management or risk assessment.

More comprehensive and integrative frameworks that take into account the variety of industry sectors around the world and their wider economic ramifications are still desperately needed, nevertheless. A thorough PRISMA-based SLR was used to identify, categorize, and critically review the body of literature on SME risk assessment and management in order to answer the research objectives put out in this study.The study identifies important gaps in current frameworks and assesses the degree to which new tools and procedures have been used by synthesizing conceptual, empirical, and methodological data over a 20-year period.

The study comes to the conclusion that a thorough framework for identifying and evaluating all the significant risk variables is required, together with risk management techniques to reduce them. Industry surveys and scholarly research from throughout the world provide evidence of the high failure rate and low death rate among SMEs.

Conflict of interest
There is no conflict of interest among authors.

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Ethical considerations
The paper is unique and corresponding author have full permission from other co-authors for communication.

References
1. Ms. Sonali,2026, Bagade, Dr. Shyamsunder Chitta, Dr. Prashant Ubarhand, Dr. KDV Prasad''Toward Resilient SMEs: A Critical Review of Risk Assessment and Management Frameworks''SCMS Journal of Indian Management,23(1):5-24.
2. Agyapong, Daniel. 2021. "Analysing Financial Risks in Small and Medium Enterprises: Evidence from the Food Processing Firms in Selected Cities in Ghana." International Journal of Entrepreneurial Behaviour and Research 27(1):45–77. doi: 10.1108/IJEBR-05- 2020-0269/FULL/XML.
3. Alcalde-Heras, Henar, Cristina Iturrioz-Landart, and Cristi n a Ar a g o n -Amo n a rri z . 2 0 1 9 . “SME Ambidexterity during Economic Recessions: The Role of Managerial External Capabilities.” Management Decision 57(1):21–40. doi: 10.1108/MD-03-2016- 0170.
4. Ali, Zulqurnain, Bi Gongbing, and Aqsa Mehreen. 2021. “Do Vulnerability Mitigation Strategies Influence Firm Performance: The Mediating Role of Supply Chain Risk.” International Journal of Emerging Markets. doi: 10.1108/IJOEM-04-2020-0397/
5. Alora, Aswin, and Mukesh K. Barua. 2022. “Development of a Supply Chain Risk Index for Manufacturing Supply Chains.” International Journal of Productivity and Performance Management 71(2):477–503. doi: 10.1108/IJPPM-11-2018-0422
6. Altman, Edward I., Gabriele Sabato, and Nicholas Wilson. 2010. “The Value of Non-Financial Information in SME Risk Management.” The Journal of Credit Risk 6(2):1–33.
7. Anon. 2022. “Risk Management | Small Business Development Corporation.” Retrieved March 25, 2022 (https://www.smallbusiness.wa.gov.au/legal-risk/riskmanagement). SCMS Journal of Indian Management, January - March 2026 19
8. Atkinson, Lauren Z., and Andrea Cipriani. 2018. “How to Carry out a Literature Search for a Systematic Review: A Practical Guide.” BJPsych Advances 24:74–82. doi: 10.1192/bja.2017.3.
9. Babu, Harish, Prabhas Bhardwaj, and Anil K. Agrawal. 2021. “Modelling the Supply Chain Risk Variables Using ISM: A Case Study on Indian Manufacturing SMEs.” Journal of Modelling in Management 16(1):215–39. doi: 10.1108/JM2-06-2019- 0126/FULL/XML.
10. Belás, Jaroslav, Aleksandr Ključnikov, Sergej Vojtovič, and Monika Sobeková-Májková. 2015. “Approach of the SME Entrepreneurs to Financial Risk Management in Relation to Gender and Level of Education.” Economics and Sociology 8(4):32–42. doi: 10.14254/2071-789X.2015/8-4/2.
11. Bensaada, Ilies, and Noria Taghezout. 2019. “An Enterprise Risk Management System for SMEs: Innovative Design Paradigm and Risk Representation Model.” Https://Doi.Org/10.1080/ 13215906. 2019.1624190 2 6 (2): 1 7 9 – 2 0 6 . d o i: 1 0 . 1 0 8 0 / 1 3 2 1 5 9 0 6. 2019.1624190.
12. Bilal, Ahmad Raza, Aaisha Arbab Khan, and Michèle Eunice Marie Akoorie. 2016. “Constraints to Growth: A Cross Country Analysis of Chinese, Indian and Pakistani SMEs.” Chinese Management Studies 10(2):365–86. doi: 10.1108/CMS-06-2015- 0127/FULL/XML.
13. Boom, René-Pascal van den, and René-Pascal van den Boom. 2019. “Financial Risk Management in Dutch SMEs: An Empirical Analysis.” Journal of Financial Risk Management 8(2):55–72. doi: 10.4236/ JFRM.2019.82005. Brustbauer, Johannes. 2014. “Enterprise Risk Management in SMEs: Towards a Structural Model:” Http:// D x . D o i. O rg / 1 0 . 11 7 7 / 0 2 6 6 2 4 2 6 1 4 5 4 2 8 5 3 34(1):70–85. doi: 10.1177/0266242614542853.
14. Canbolat, Y. B., G. Gupta, S. Matera, and K. Chelst. 2008. “Analysing Risk in Sourcing Design and Manufacture of Components and Sub-Systems to Emerging M a r k e ts. ” H tt p :// D x . D o i. O r g / 1 0 . 1 0 8 0 / 00207540701266807 46(18):5145–64. doi: 10.1080/00207540701266807. 15.

15. Cantonnet, María Luisa, Juan Carlos Aldasoro, and Jon Iradi. 2019. “New and Emerging Risks Management in Small and Medium-Sized Spanish Enterprises.” Safety Science 113:257–63. doi: 10.1016/ J.SSCI.2018. 11.032.
16. Catanzaro, Alexis, and Christine Teyssier. 2020. “Export Promotion Programs, Export Capabilities, and Risk Management Practices of Internationalized SMEs.” S m a ll B u si n e ss E c o n o m i c s 2 0 2 0 5 7 : 3 57(3):1479–1503. doi: 10.1007/S11187-020-00358-4.
17. Chen, Xiaohong, Xiaoding Wang, and Desheng Dash Wu. 2010. “Credit Risk Measurement and Early Warning of SMEs: An Empirical Study of Listed SMEs in China.” Decision Support Systems 49(3):301–10. doi: 10.1016/J.DSS.2010.03.005.
18. Chiarini, Andrea. 2017. “Risk-Based Thinking According to ISO 9001:2015 Standard and the Risk Sources European Manufacturing SMEs Intend to Manage.” TQM Journal 29(2):310–23. doi: 10.1108/TQM-04- 2016-0038/FULL/XML.
19. Chowdhury, Priyabrata, Kwok Hung Lau, and Siddhi Pittayachawan. 2019. “Operational Supply Risk Mitigation of SME and Its Impact on Operational Performance: A Social Capital Perspective.” International Journal of Operations and Production Management 39(4):478–502. doi: 10.1108/IJOPM-09- 2017-0561/FULL/XML.
20. Chu, M., Chang, Y., Lee, C., & Cheng, K. (2019). Perceptions of communications sector regulatory performance in the East Asia and Pacific region. Utilities Policy, 58, 128–135. https://doi.org/10.1016/ j.jup.2019.05.006
21. Crovini, Chiara, Giovanni Ossola, and Bernd Britzelmaier. 2021. “How to Reconsider Risk Management in SMEs? An Advanced, Reasoned and Organised Literature Re v i ew. ” Eu ro p e a n Ma n a g eme n t J o u r n a l 39(1):118–34. doi: 10.1016/ J.EMJ.2020.11.002.
22. Crovini, Chiara, Gabriele Santoro, and Giovanni Ossola. 2 0 2 0 . “Re t h i n k i n g Ris k M a n a g eme n t i n Entrepreneurial SMEs: Towards the Integration with the Decision-Making Process.” Management Decision 59(5):1085–1113. doi: 10.1108/MD-10-2019-1402/FULL/XML
23. Demertzis, G., and K. I. Vatalis. 2021. “Project Risk Management Adaptation of Infrastructures in the Greek Context.” IOP Conference Series: Earth and Environmental Science 899(1):012055. doi: 10.1088/1755-1315/899/1/012055.
24. Dvorský, Ján, and Zora Petráková. 2021. “Effect of Business Risks on the Business Future by Czech and Slovak SMEs in the Segment Transport and Services.” Transportation Research Procedia 55:1444–51. doi: 10.1016/J.TRPRO.2021.07.131.
25. Falkner, Eva Maria, and Martin R. W. Hiebl. 2015. “Risk Management in SMEs: A Systematic Review of Available Evidence.” Journal of Risk Finance 16(2):122–44. doi: 10.1108/JRF-06-2014- 0079/FULL/XML.
26. Fera, M., and R. Macchiaroli. 2010. “Appraisal of a New Risk Assessment Model for SME.” Safety Science 48(10):1361–68. doi: 10.1016/J.SSCI.2010.05.009.
27. Ferreira de Araújo Lima, Priscila, Maria Crema, and Chiara Verbano. 2020. “Risk Management in SMEs: A Systematic Literature Review and Future Directions.” European Management Journal 38(1):78–94. doi: 10.1016/J.EMJ.2019.06.005.
28. Fl ávio Mor a is, João J. Fe rr e ir a , 2020, SME internationalisation process: Key issues and contributions, existing gaps and the future research agenda, European Management Journal, Volume 38, Iss u e 1 , 6 2 - 7 7 , h tt p s:// d o i. o r g / 1 0 . 1 0 1 6 / j.emj.2019.08.001
29. Gama, Ana Paula Matias, and Helena Susana Amaral Geraldes. 2012. “Credit Risk Assessment and the Impact of the New Basel Capital Accord on Small and Medium-Sized Enterprises: An Empirical Analysis.” Management Research Review 35(8):727–49. doi: 10.1108/01409171211247712.
30. Games, Donard, and Ranggi Putri Rendi. 2019. “The Effects of Knowledge Management and Risk Taking on SME Financial Performance in Creative Industries in an Emerging Market: The Mediating Effect of Innovation Outcomes.” Journal of Global Entrepreneurship Research 9(1). doi: 10.1186/S40497-019-0167-1.
31. Glowka, Gundula, Andreas Kallmünzer, and Anita Zehrer. 2021. “Enterprise Risk Management in Small and Medium Family Enterprises: The Role of FamilyInvolvement and CEO Tenure.” International Entrepreneurship and Management Journal 17(3):1213–31. doi: 10.1007/S11365-020-00682-X.
32. Gonçalves, Tânia S. H., Fernando A. F. Ferreira, Marjan S. Jalali, and Ieva Meidutė-Kavaliauskienė. 2016. “An Idiosyncratic Decision Support System for Credit Risk Analysis of Small and Medium-Sized Enterprises.” Technological and Economic Development of Economy 2 2 (4): 5 9 8 – 6 1 6 . d o i: 1 0 . 3 8 4 6 / 2 0 2 9 4 9 1 3 . 2015.1074125.

33. Guo, W., Chen, X., & Liu, H. (2022). Decision-Making under Uncertainty: How Easterners and Westerners Think Differently. Behavioral Sciences, 12(4), 92. https://doi.org/10.3390/bs12040092
34. Grandon, Elizabeth E., and J. Michael Pearson. 2004. “Electronic Commerce Adoption: An Empirical Study of Small and Medium US Businesses.” Information & Management 42(1):197–216. doi: 10.1016/ J.IM.2003.12.010.
35. Havierniková, Katarína, Malgorzata Okreglicka, and Marcel Kordoš. 2020. “Selected Aspects of Risk Management in Polish and Slovak SMEs.” Littera Scripta. doi: 10.36708/LITTERA_SCRIPTA2019/2/1.
36. Henschel, Thomas. 2006. “Risk Management Practices in German SMEs: An Empirical Investigation.” International Journal of Entrepreneurship and Small B u s i n e s s 3 (5) : 5 5 4 – 7 1 . d o i: 1 0 . 1 5 0 4 / IJESB.2006.010543.
37. Hudáková, Mária, and Ján Dvorský. 2018. “Assessing the Risks and Their Sources in Dependence on the Rate of Implementing the Risk Management Process in the Smes.” Equilibrium. Quarterly Journal of Economics and Economic Policy 13(3):543–67. doi: 10.24136/ EQ.2018.027.
38. Hudakova, Maria, Matej Masar, Maria Luskova, and Milan Robin Patak. 2018. “The Dependence of Perceived Business Risks on the Size of SMEs.” Journal of Competitiveness 10(4):54–69. doi: 10.7441/ JOC.2018.04.04.
39. Jobst, Andreas A. 2006. “Asset Securitisation as a Risk Management and Funding Tool: What Small Firms Need to Know.” Managerial Finance 32(9):731–60. doi: 10.1108/03074350610681943/FULL/XML.
40. Mäenpää, Irinja, and Raimo Voutilainen. 2012. “Insurances for Human Capital Risk Management in SMEs.” VINE 4 2 (1) : 5 2 – 6 6 . d o i : 1 0 . 1 1 0 8 / 03055721211207761/FULL/XML.
41. Marcelino-Sádaba, Sara, Amaya Pérez-Ezcurdia, Angel M. Echeverría Lazcano, and Pedro Villanueva. 2014. “Project Risk Management Methodology for Small Firms.” International Journal of Project Management 3 2 (2) : 3 2 7 – 4 0 . d o i : 10.1016/J.IJPROMAN.2013.05.009.
42. Maiti, M. (2018). Scope for alternative avenues to promote financial access to MSMEs in developing nation evidence from India. International Journal of Law and M a n a g e m e n t , 6 0 (5) , 1 2 1 0 – 1 2 2 2 . https://doi.org/10.1108/ijlma-06-2017-0141
43. Meiryani. (2024). Risk management of small and mediumsized enterprises (SMEs) for upcoming research priorities. Managerial Finance, 50(9), 1578–1597. https://doi.org/10.1108/mf-07-2023-0459
44. Panigrahi Ashok. 2012. Risk Management in Micro, Small and Medium Enterprises (MSMEs) in India: A Critical Appraisal. Pereira, Luís, Alexandra Tenera, João Bispo, and João Wemans. 2015. “A Risk Diagnosing Methodology Web-Based Platform for Micro, Small and Medium Busine ss e s: Rema rks and Enhanc ements. ” Communications in Computer and Information Science 454:340–56. doi: 10.1007/978-3-662-46549-3_22.
45. Qiao, R., & Zhao, L. (2023). Reduce supply chain financing risks through supply chain integration: dual approaches of alleviating information asymmetry and mitigating supply chain risks. Journal of Enterprise Information M a n a g e m e n t , 3 6 (6) , 1 5 3 3 – 1 5 5 5 . https://doi.org/10.1108/jeim-01-2023-0016
46. Qubtan, Taha Redha al, Pei Tha Gan, Fatimah Salwa Abd Hadi, Norasibah Abdul Jalil, and Norimah Rambeli. 2021. “Practical Risk Management Approaches among Small and Medium Enterprises.” TEM Journal 10(2):996–1004. doi: 10.18421/TEM102-65.
47. Quintiliani, Andrea. 2017. “Financial Distress Cost of Italian Small and Medium Enterprises: APredictive and Interpretative Model.” Journal of Risk Finance 18(5):564–80. doi: 10.1108/JRF-04-2017- 0071/FULL/XML.
48. SCMS Journal of Indian Management, January - March 2026 22 Raya, Alia Bihrajihant, Riesma Andiani, Abi Pratiwa Siregar, Imade Yoga Prasada, Fairuz Indana, Theresia Gracia Yunindi Simbolon, Agustina Tri Kinasih, and Agus Dwi Nugroho. 2021. “Challenges, Open Innovation, and Engagement Theory at Craft SMEs: Evidence from Indonesian Batik.” Journal of Open Innovation: Technology, Market, and Complexity 2021, Vol. 7, Page 121 7(2):121. doi: 10.3390/ JOITMC7020121.
49. Ramdani, B., Raja, S., & Kayumova, M. (2022). Digital innovation in SMEs: a systematic review, synthesis and research agenda. Information Technology for Development, 28(1), 56–80. https://doi.org/10.1080/ 02681102.2021.1893148

50. Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2023). A systematic literature review on SME financing: Trends and future directions. Journal of Small Business Management, 61(3), 1247–1277. https://doi.org/ 10.1080/00472778.2021.1955123
51. Reboud, Sophie, and W. Tim. 2003. "Mazzaro l/ Cahiers Du CEREN." 4. Redha, Taha, Al Qubtan, Pei-Tha Gan, Fatimah Salwa, Abd Hadi, Abdul Jalil, and Norimah Rambeli. 2021. "Practical Risk Management Approaches among Small a n d Me d i um En t e r p ris e s. " TE M J o u r n a l 10(2):996–1004. doi: 10.18421/TEM102-65.
52. Rehman, Amin Ur, and Muhammad Anwar. 2019. "Mediating Role of Enterprise Risk Management Practices between Business Strategy and SME Pe rformanc e . " Small Ent e rpris e Re s earch 26(2):207–27. doi: 10.1080/13215906.2019.1624385.
53. Renault, Bérenger, Justus Agumba, and Nazeem Ansary. 2018. "An Exploratory Factor Analysis of Risk Management Practices: A Study among Small and Medium Contractors in Gauteng." Acta Structilia 25(1). doi: 10.18820/24150487/AS25I1.1.
54. R it c h i e , B o b , a n d C l a r e B r i n d l e y. 2 0 0 0 . "Disintermediation, Disintegration and Risk in the SME Global Supply Chain." Management Decision 38(8):575–83. doi: 10.1108/00251740010378309/ FULL/XML.
55. Rostami, Ali, James Sommerville, Ing Liang Wong, and Cy n t h i a L e e . 2 0 1 5 . "Ris k M a n a g e m e n t Implementation in Small and Medium Enterprises in the UK CRaya, Alia Bihrajihant, Riesma Andiani, Abi Pratiwa Siregar, Imade Yoga Prasada, Fairuz Indana, Theresia Gracia Yunindi Simbolon, Agustina Tri Kinasih, and Agus Dwi Nugroho. 2021. "Challenges, Open Innovation, and Engagement Theory at Craft SMEs: Evidence from Indonesian Batik." Journal of Open Innovation: Technology, Market, and Complexity 2021, Vol. 7, Page 121 7(2):121. doi: 10.3390/ JOITMC7020121.
56. Ramdani, B., Raja, S., & Kayumova, M. (2022). Digital innovation in SMEs: a systematic review, synthesis and research agenda. Information Technology for Development, 28(1), 56–80. https://doi.org/10.1080/ 02681102.2021.1893148
57. Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2023). A systematic literature review on SME financing: Trends and future directions. Journal of Small Business Management, 61(3), 1247–1277. https://doi.org/ 10.1080/00472778.2021.1955123
58. Reboud, Sophie, and W. Tim. 2003. "Mazzaro l/ Cahiers Du CEREN." 4. Redha, Taha, Al Qubtan, Pei-Tha Gan, Fatimah Salwa, Abd Hadi, Abdul Jalil, and Norimah Rambeli. 2021. "Practical Risk Management Approaches among Small a n d Me d i um En t e r p ris e s. " TE M J o u r n a l 10(2):996–1004. doi: 10.18421/TEM102-65.
59. Rehman, Amin Ur, and Muhammad Anwar. 2019. "Mediating Role of Enterprise Risk Management Practices between Business Strategy and SME Pe rformanc e . " Small Ent e rpris e Re s earch 26(2):207–27. doi: 10.1080/13215906.2019.1624385.
60. Renault, Bérenger, Justus Agumba, and Nazeem Ansary. 2018. "An Exploratory Factor Analysis of Risk Management Practices: A Study among Small and Medium Contractors in Gauteng." Acta Structilia 25(1). doi: 10.18820/24150487/AS25I1.1.
61. R it c h i e , B o b , a n d C l a r e B r i n d l e y. 2 0 0 0 . "Disintermediation, Disintegration and Risk in the SME Global Supply Chain." Management Decision 38(8):575–83. doi: 10.1108/00251740010378309/ FULL/XML.